

PRODUCT DATA SHEET

Canary grass vs teff

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|--------------------------------|--|
| Botanical names | Phalaris canariensis & Eragrostis tef |
| Sowing rate | As main or second crop canary grass 50 kg/ha & teff 10-12 kg/ha, as a catch crop canary grass 63 kg/ha & teff 15 kg/ha |
| Distance between rows | Similar to cereals |
| Sowing period | As a main crop, until late May, as a second crop until late July, as a catch crop until late August |
| Sowing depth | Shallow |
| Germination temperature | From soil temperatures of 16°C |



Summary of key characteristics

Both species are annual grasses that manage to establish themselves rapidly even under dry conditions. In temperate latitudes, both species can be used to quickly bridge gaps in forage production, especially in years when staple feed is in short supply, with canary grass being classified as a higher-yielding species in this regard. Stands become ready for the first cut by 35-40 days after sowing.

Both species are outstanding green manure plants

- Thick and deep root penetration
- Improvements to soil structure

| Canary grass | Teff |
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| Phalaris canariensis | Eragrostis tef |

Botanical information

- Family: Poaceae (grasses)
- Origin:

| Canary grass | Teff |
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| <ul style="list-style-type: none"> ▸ Originated in the western Mediterranean ▸ Now grown globally in warm, temperate zones ▸ In Central Europe, wild forms are only found sparsely in wasteland plant communities ▸ First cultivated varieties for Central Europe now on the market | <ul style="list-style-type: none"> ▸ Originally from Ethiopia and tropical East Africa, where it has been cultivated since 4000 BC ▸ Spread throughout Africa in tropical and subtropical areas ▸ Wild forms are now frequently found in the world's moderate and temperate climate zones |

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Morphology

| Canary grass | Teff |
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| <ul style="list-style-type: none"> ▶ Annual grass that mostly grows in small tussocks ▶ Stems erect or bent at the base, stiff and smooth ▶ Height: 20-120 cm ▶ Ligules: present, 3-8 cm long, lightly frayed along the edges ▶ Leaf sheath: smooth or slightly rough ▶ Leaf blade: rough, flat, narrows to a very slender point, up to 25 cm long and around 12 mm wide ▶ Inflorescence: greenish-white, oblong-oval, very dense, erect panicle with a length of 2-5 cm and width of about 2 cm ▶ Flowering period: June to September | <ul style="list-style-type: none"> ▶ Annual, erect grass that grows in tufts ▶ Height: 30-100 cm ▶ Stems upright and mostly simply branched ▶ Unlike many other millets, the internodes and leaf sheaths are not hairy ▶ Ligules: present and with hair in a single straight line (with trichomes) ▶ Leaf blade: hairless, flat and curled upwards, with a length of 6-30 cm and width of 0.2-0.4 mm ▶ Flowering period: July to August ▶ Fruits: very small relative to other millets, with a diameter of just 1-1.5 mm |

Varieties and seeds

- ▶ Globally, regional varieties predominate in agriculture

| Canary grass | Teff |
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| <ul style="list-style-type: none"> ▶ Small portfolio of EU varieties available ▶ One variety has been registered in Germany ▶ Larger selection of varieties in Canada ▶ Currently, the vast majority of applications use commercial seed | <ul style="list-style-type: none"> ▶ Predominance of commercial seed ▶ No established varieties available in most countries ▶ Individual varieties have been bred in the Netherlands |



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Both species have similar or identical requirements in terms of climate, soil and crop rotation. This means that they can be effectively substituted for one another or cultivated together.

Usage

- Can be sown pure or in mixtures
- Possible applications as a main crop as well as shorter seasons as a summer catch crop
- In the USA, used as a cover crop for seed multiplication fields

Climate requirements

- Low climate requirements
- Both species have a high tolerance to heat and drought
 - Optimal temperature between 10 and 27°C
- Susceptible to frost

Soil requirements

- Generally low soil requirements

| Canary grass | Teff |
|--|---|
| <ul style="list-style-type: none">▸ Loose soils that can easily warm up are preferred▸ Thrives on rubble piles and wastelands | <ul style="list-style-type: none">▸ All-rounder: everything is possible, from marginal, sandy sites to areas affected by standing water |

Crop rotation

- Both species are autotolerant
- Can be deployed in many crop rotations
 - Within cereal rotations or in grass seed multiplication: do not permit either species to develop seeds in order to prevent the emergence of volunteers

Soil preparation

- The aim is to have a weed-free, well-distributed, even, finely crumbled seedbed for sowing:

| Objective | New cultivation |
|-----------|---|
| Measures | <p>Soil preparation (primary preparation) with plough for neat cultivation or conservation-minded preparation with a cultivator/disc harrow. Direct sowing is also possible for summer catch crops.</p> <p>Secondary processing using a tiller or rotary harrow for an evenly crumbled, well-distributed seedbed.</p> |



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Sowing

| Canary grass | Teff |
|---|---|
| <ul style="list-style-type: none"> ▸ Seeding rate <ul style="list-style-type: none"> ▪ As a main or second crop: 600 seeds/m² (approx. 50 kg/ha) ▪ As a catch crop: 800 seeds/m² (approx. 63 kg/ha) ▸ Sowing depth: 1-2 cm | <ul style="list-style-type: none"> ▸ Seeding rate <ul style="list-style-type: none"> ▪ As a main or second crop: approx. 10-12 kg/ha ▪ As a catch crop: approx. 15 kg/ha ▸ Sowing depth: max. 0.5 cm |

Crop protection

Both species are robust and, to date, have been nearly unaffected by diseases or pests.

▸ **Weed control**

Especially for no-till scenarios, choose sites with low weed pressure; after sowing both species establish themselves rapidly and can effectively suppress weeds.

▸ **Fungal pathogens**

When cultivated in the tropics or subtropics, infestations of rust fungi (*Uromyces eragrostidis*) can occur.

Fertilisation

- Under consideration of current legislation, the N demand amounts to 60-110 kg N/ha, with 30-55 kg N/ha at each cut

Harvest and treatment

- First cut around 35-40 days after sowing (under favourable conditions, threshing of the seeds is possible at 90 days after sowing)
- Subsequent cuts possible under favourable conditions
 - Every 30 days following the previous cut
- Yield levels under favourable conditions
 - Canary grass: 20,000-35,000 kg DM/ha
 - Teff: 10,000-20,000 kg DM/ha

Usage

| Canary grass | Teff |
|--|--|
| <ul style="list-style-type: none"> ▸ Feed uses <ul style="list-style-type: none"> ▪ Silage ▪ Hay ▪ Birdseed ▸ Human food <ul style="list-style-type: none"> ▪ Flour production | <ul style="list-style-type: none"> ▸ Feed uses (especially brownish seeds) <ul style="list-style-type: none"> ▪ Silage ▪ Hay ▸ Human food (especially whitish seeds) <ul style="list-style-type: none"> ▪ Flour production ▪ Used as a starting product in malting ▪ Seeds are gluten free and rich in essential fatty acids and iron |

Any questions? Please feel free to contact us!

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